CATIA Piping and Tubing Design

CATIA Piping and Tubing Design creates and manages the physical designs of piping and tubing systems using industry standards and specifications, within the context of a full digital mock-up.

It also provides tools to define the physical system of both rigid and flexible pipes and tubes from basic routing definition to detailed design. This is made possible with the help of intelligent part placement based on standard and design rules that comply with company knowledge. In addition, its tools make it possible to quickly query design information and generate reports based on any component parameters. A full digital mock-up ensures design precision while saving time, minimizing errors, and reducing expenses. Together with CATIA V6's data management offerings, this product empowers users to manage their systems all the way from functional design down to detailed design.

**Key capabilities**

**Creation and management of pipes and tubes**
Users can create pipes and tubes with standard industry attribute information. In addition, designers can create their own attributes to be included in pipes and tubes definitions.

**Function-driven piping and tubing part placement**
Users can capture the design intent for selected physical parts to ensure that modification scenarios are possible. Designers can layout and model a 3D piping or tubing network either manually or automatically. If parts are based on user-defined rules, such as branching or turning rules, much of the layout can be created automatically to optimize the total design process.

**Evolution from preliminary to detailed design layout**
Preliminary layouts can evolve into detailed designs using standard piping parts and specification catalogs. Using this methodology, designers can progress to the final layout stage with greater speed and accuracy.

**Integrated dynamic design rules**
During the preliminary and detailed design process, rule-based design checking actions are automatically launched to validate the proposed design. Users can modify existing samples, or create their own rules, to control the graphic representations of objects via knowledgeware rules. After design creation, the user can still validate the design using a dedicated manufacturability checking command.

**Customer benefits**

- Model and customize objects with "smart" features
- Design with a highly interactive and intuitive user interface
- Integrate business rules
- Explode piping and tubing objects, attributes, and relationships in the V6 database
- Access full traceability with RFLP approach
and tubing objects and routes
Users are able to revise layouts and change route segments and nodes using offset and clearance capabilities. Piping and Tubing parts and routes can be directly manipulated by pushing and stretching points, segments and extremities. Connectivity is managed through connect and disconnect tools. Piping and Tubing part modifications propagate changes that will impact the design intent. Similarly, a specification change will force a new part selection and placement.

Query and analysis of piping and tubing parts and configurations
Key properties are readily available to the user at element pre-highlight. Users can perform a wide variety of queries and/or analysis to inquire about the specific properties of any object in the design document. Through a network analysis tool, designers also have the ability to query and analyze tubing connectivity.

Customizable report definition and drawings
A dedicated report definition capability allows the user to tailor the definition of the reports based on company standards. This definition can be accessed as needed, any time during the design process. Specific tools also allow the customization of the drawing format for single and double line display. The user can customize corporate data and define rules that will enforce company standards, such as defining piping and tubing specifications and geometry definitions, as well as equipment catalog building.

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